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| EXAMINER |
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HANAN, DEVIN J

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| ART UNIT | PAPER NUMBER |
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3745

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Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/827,285
Filing Date: April 20, 2004
Appellant(s): CHEN ET AL.

MAILED
OCT 30 2006
Group 3700

Joseph McKinney Muncy
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/5/2006 appealing from the Office action mailed 2/14/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,647,271

Nagai et al.

3-1987

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-4, 6-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagai et al. (U.S. Patent 4,647,271).

Nagai et al. disclose an impeller with a hub (42) having an upper surface and a center point (axis of rotation) and a plurality of blades (43) having bottom portions arranged in a circle on the upper surface (upper part of hub 42) with respect to the center point.

Regarding claim 2, Nagai et al. disclose all of the elements of claim 1 and impeller blades (43) formed into an annular structure having an outer diameter greater than that of the hub (figure 27, equivalent to figure 23 without hub ring 46).

Regarding claim 3, Nagai et al. disclose all of the elements of claim 1 and 2 and an impeller with a hub having a sidewall (45b) and the bottom portion of each blade has a portion extending downward along sidewall (figure 27).

Regarding claim 4, Nagai et al. disclose all of the elements of claim 1 and an impeller with blades having an outer diameter equal to that of the hub (figure 23).

Regarding claim 6, Nagai et al. disclose all of the elements of claim 1 and that the impeller hub and blades that are integrally formed (col. 1 lines 15-20).

Regarding claim 7, Nagai et al. disclose a fan (from figure 1) with a frame (1), a motor (5),

a hub (42), disposed in a frame and containing the motor therein having an upper surface and a center point (axis of rotation) and

a plurality of blades (43) having bottom portions arranged in a circle on the upper surface with respect to the center point (axis of rotation).

Regarding claim 8, Nagai et al. disclose all of the elements of claim 7 and the blades have an outer diameter greater than the hub (figure 27).

Regarding claim 9, Nagai et al. disclose all of the elements of claim 8 and the hub (42) has a sidewall and the blade (43) extends down along the sidewall (figure 27)

Regarding claim 10, Nagai et al. disclose all of the elements of claim 7 and the outer diameter of the blades to be equal to the diameter of the hub (figure 23).

Regarding claim 12, Nagai et al. disclose all of the elements of claim 7 and that the hub and blades are integrally formed (col. 1 lines 15-20).

Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. Nagai et al. disclose all of the claimed limitations in claims 1 and 7, but does not disclose expressly that the blades have an outer diameter less than that of the hub. Instead, Nagai et al. indicates that the outer diameter of the blades is either equal or greater than the diameter of the hub.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to arrange the blades to have an outer diameter less than that of the hub because Applicant has not disclosed that the claimed arrangement provides an advantage, is used for a particular purpose, or solves

a stated problem. One of ordinary skill in the art, furthermore, would have expected the blades of Nagai et al., and applicant's invention, to perform equally well with either the arrangement taught by Nagai et al. or the claimed arrangement of the blades to have an outer diameter less than that of the hub because both arrangements would perform the same function of moving air radially.

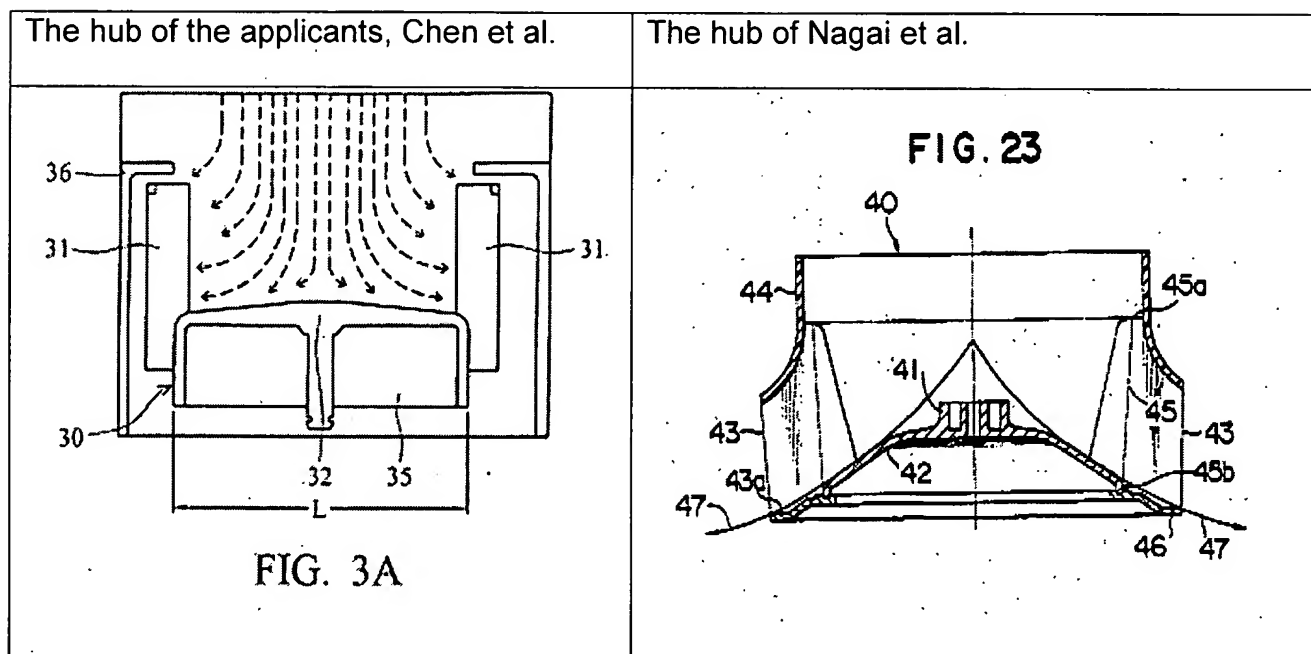
Therefore, it would have been prima facie obvious to modify Nagai et al. to obtain the invention as specified in claims 5 and 11 because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Nagai et al.

(10) Response to Argument

I. The appellants argue that the blades of Nagai et al. are not mounted onto a hub. Appellants state, "The blades in Nagai are mounted on the hub plate and not the hub 41. Thus, this patent does not teach that the blades are directly disposed on the hub. By avoiding an intermediate structure, a simpler impeller can be designed in the present invention. Also, such additional structures can interfere with the air flow as has been discussed in the specification of the present invention. By mounting the blades directly on the upper surface of the sidewall of the hub, the present invention can have a smooth efficient air flow." (page six, a section of paragraphs 2 and 3)

Appellants apparently have relied on the difference in nomenclature between elements in the invention and the same corresponding elements in Nagai et al. to argue the rejection under 35 USC 102. Appellants misrepresent the hub plate (figure 23,

element 42, see below) to be a different part than hub (41). Both element numbers (41 and 42) describe different areas of one integral part formed at the same time (col. 9 lines 18-21). The argument that the blades of Nagai et al. are not directly arranged on a hub is not persuasive since both hub (41) and hub plate (42) are the structural equivalent to the applicant's hub (applicants' drawing figure 3, element 32, see below). Also, the claim does not make any mentions that the hub should not interfere with the airflow.



II. Appellants argue that it is not obvious to modify the impeller of Nagai et al. to have blades with an outer diameter less than that of a hub. Appellant states, "recognizing that the blades of Nagai either extend to or beyond the hub plate, the examiner has alleged that it would be obvious to modify this arrangement to have the

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plates with an outer diameter less than that of the hub ... If they were made so closely spaced as to be on the small hub 41, then the efficiency of the fan would be hindered."

(page 9, first paragraph)


The examiner agrees that a smaller outer diameter of the blades could decrease efficiency, but notes the applicant's invention would suffer from the same problem.

Additionally, if the outer diameter of the blades is slightly less than the diameter of hub plate 42, not hub 41, then the problem would also be relieved.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully Submitted,


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10/27/06

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